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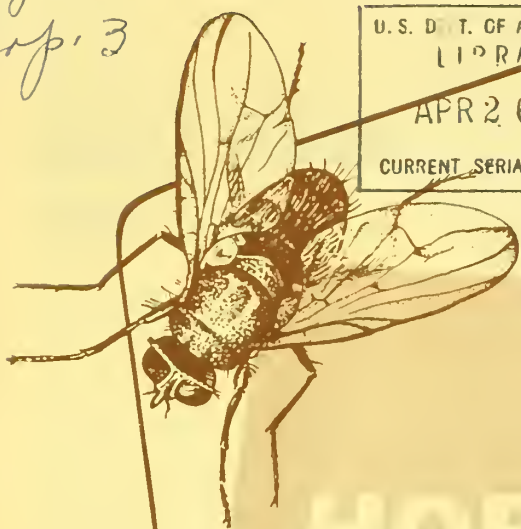
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HORN
FLIES
on cattle

...how to control them

Leaflet No. 388

U. S. DEPARTMENT OF AGRICULTURE



HORN FLIES on cattle

. . . how to control them

Horn flies are primarily pests of cattle and spend most of their lives on them. They feed by piercing the skin and sucking blood.

Fighting the flies drains an animal's energy and interferes with feeding and resting. An animal may lose as much as half a pound a day during fly season. Milk production may be reduced as much as 20 percent.

Horn flies are present from spring until fall. They sometimes decrease in number during hot, dry weather.

They usually attack the backs of cattle, out of reach of the tail and the swing of the head. Sometimes, to avoid sun or rain, they congregate on the underparts of the animal's body. When the air is cool they often rest on the base of the horns; hence, the name horn flies.

The scientific name of the horn fly is *Haematobia irritans*.

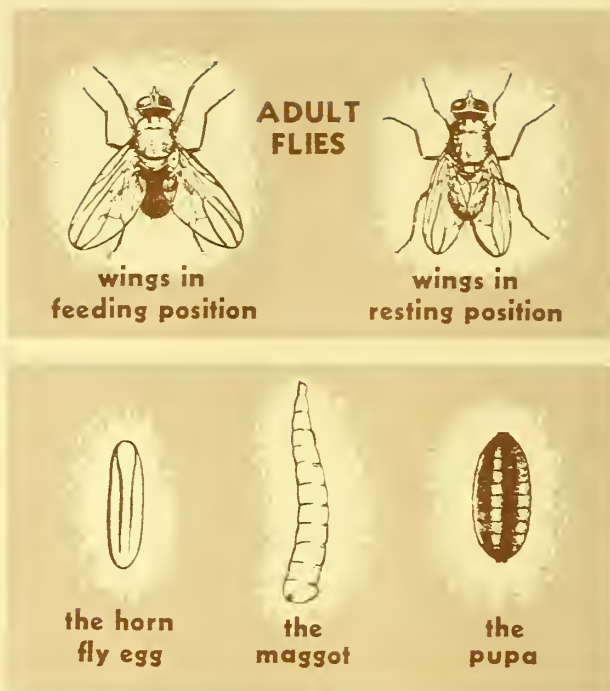
Life stages . . .

Horn flies resemble house flies but are only about half as large. The females lay their eggs on fresh manure almost immediately after it is dropped by cattle.

The **horn fly egg** is oblong and reddish brown. In warm weather the eggs hatch into maggots in less than a day.

The **maggot**, upon hatching, enters the fresh manure, where it feeds and develops to maturity in about 5 days. When full grown, the maggot changes to the pupal, or resting, stage. It pupates in the dropping in which it developed or on the soil beneath.

The **pupa**, which is inside a pupal case, develops into a fly in about 7 days. The flies begin to lay eggs in 2 days.



The complete life cycle, from egg to adult, takes only about 2 weeks.

Control . . .

Spraying

Spraying cattle with an insecticide is the best means of control.

For a large number of cattle, power sprayers that operate at 100 to 200 pounds of pressure per square inch are generally most suitable. The sprayer should be equipped with an agitator to keep the spray well mixed and with an adjustable spray nozzle.

A few head of cattle can be treated with hand-operated air-pressure sprayers of the cylindrical or knapsack type. If the sprayer has no agitator, shake the tank from time to time to keep the insecticide in suspension.

To control horn flies only, spray the animal's shoulders, back, and flanks until they are wet. To control lice and other pests at the same time, spray all parts of the animal thoroughly.

In the directions that follow, recommendations are given for frequency of spraying. If all owners in the community treat their animals, spraying can be less frequent.

PREPARING A 0.5-PERCENT SPRAY

Purchased product	Amount to mix with—	
	100 gallons of water	5 gallons of water
WETTABLE POWDER		
	Pounds	Ounces
25-percent	16	12
40-percent	10	8
50-percent	8	6½
75-percent	5⅓	4
EMULSIFIABLE CONCENTRATE		
	Quarts	Cupfuls
25-percent	8	1½
50-percent	4	¾
60-percent	3⅓	⅔
65-percent	3	⅝

● For cattle other than dairy cows

Use methoxychlor, malathion, Co-Ral, ronnel, or toxaphene. Mix an emulsifiable concentrate or a wettable powder with water. Make a 0.5-percent spray. Apply about 2 quarts of spray to each mature animal. Repeat about every 3 weeks. A 0.15-percent Delnav spray may also be used. Follow instructions on the label to obtain the proper dilution.

The amount of concentrate or powder needed to make the spray depends on the percentage of actual insecticide in the product you buy. The table above shows the percentages most commonly found in retail products and, for each product, the amount needed to prepare a 0.5-percent spray.

● For dairy cows

Do not use DDT, Co-Ral, ronnel, Delnav, or toxaphene in any form or malathion or methoxychlor in sprays and dips on dairy cows that are being milked if the milk is to be used by human beings.

To control horn flies on dairy animals, use activated pyrethrum or Lethane 384 or Thanite sprays. To make an activated pyrethrum water-base spray, prepare a mixture consisting of—

1 part of an emulsifiable concentrate that contains 1 percent of pyrethrins and 10 percent of piperonyl butoxide; and 9 parts of water.

Spray about 2 quarts on each animal every 4 or 5 days.

Activated pyrethrum-oil sprays may be applied to the cows at each milking. They will protect the cattle for several hours. Apply the oil spray in the form of a light mist. Use only 1 or 2 ounces per animal; more may be harmful. Lethane 384 and Thanite oil sprays at a concentration of 3 percent may be applied in the same way; do not apply more than 2 ounces per day, per animal.

Dusting

You can obtain good control by applying 1 tablespoonful (about 10 grams) of a 50-percent methoxychlor powder to the back of each animal and rubbing it lightly over the hair. Three tablespoonfuls (1½ oz.) of 5-percent malathion dust or 4 tablespoonfuls of 4-percent malathion dust may be used in the same way, but do not apply during or less than 5 hours before milking. No residue will appear in the milk of an animal that is treated in this manner. Do not apply more frequently than once every 3 weeks. For cows not being milked, methoxychlor or toxaphene may be used. This is a time-saving way to protect a few head of cattle from horn flies. Hand-dusting takes only about half a minute per animal.

Dipping

If you prefer to dip cattle (other than dairy cows being milked), use toxaphene mixed as for a 0.5-percent spray. (See table, p. 4.) Mix dips in the vat by rapidly lowering and raising a bucket or a can attached to a rope or pole.

Self-treatment . . .

Cattle can free themselves of horn flies if you provide an insecticide-treated rubbing unit. Locate the unit near a salt lick or a water trough, or near some other place where cattle loaf or rest.

The rubbing unit consists of a post wrapped with insecticide-treated burlap sacks, or of a cable wrapped with treated burlap sacks and hung between two posts.

The cable may be a length of chain or several strands of heavy wire. Hang the chain or wire at a height of 4 feet between 2 posts set 15 to 20 feet apart; let it sag to about 18 inches above the ground midway between the posts. Or run the cable from the top of a 4-foot post to an anchor post at ground level 15 to 20 feet away.



For cattle not being milked, treat the sacks with a 5-percent methoxychlor-, DDT-, or toxaphene-oil solution, or a 2-percent malathion-oil solution, or a 1-percent ronnel-oil solution.

One gallon of oil solution will treat 15 to 20 linear feet of burlap sacks.

To make a 5-percent oil solution, mix 1 quart of a 25-percent emulsifiable concentrate of the insecticide with 1 gallon of fuel oil, diesel oil, or kerosene. To make a 1- or 2-percent oil solution, use proportionately less emulsifiable concentrate.

Re-treat the burlap every 3 to 4 weeks.

Precautions . . .

Handle all insecticides with care. Avoid unnecessary exposure while mixing or applying them. If an oil solution is spilled on the skin, wash it off immediately. If you apply an insecticide dust by hand, wash your hands thoroughly as soon as you have finished.

Do not contaminate feed, feeding utensils, watering troughs, or other places where stock drink, with the insecticide.

When spraying, be sure the insecticide stays well mixed with the water or oil.

Fight Your Insect Enemies

This leaflet was prepared by the Entomology Research Division, Agricultural Research Service. It supersedes Leaflet 270, Horn Flies: Enemies of Cattle, and Leaflet 291, Horn Fly Control on Beef Cattle.

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